Water Quality Status of the Nation's Coasts: Incorporating the Nearshore Great Lakes into the National Coastal Condition Assessment

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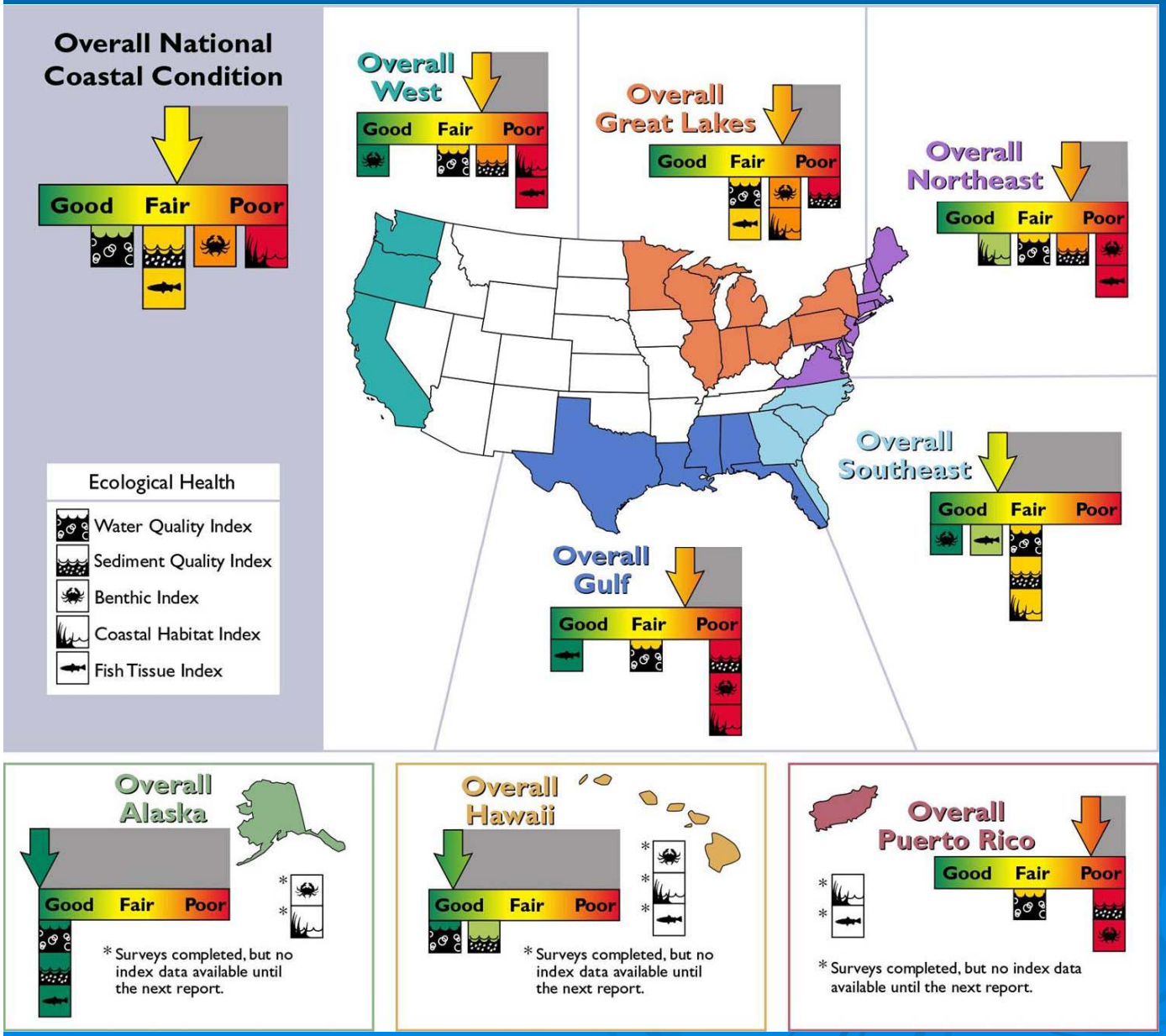
Implementing Statistically Valid Surveys of Our Nation's Waters

- Determine regional and national water quality conditions
- Promote collaboration across jurisdictional boundaries
- Build state and tribal capacity for monitoring and analysis
- Achieve a robust, statistically valid data set for better management of water resources
- Develop baseline information to evaluate progress

National Water Resource Survey Schedule

	FY07	FY08	FY09	FY10	FY11	FY12	FY13
Lakes	Field	Lab, Data	Report	Research	Design	Field	Lab, Data
Rivers	Design	Field	Lab, Data	Report	Research	Design	Field
Streams	Research	Design	Field	Lab, Data	Report	Research	Design
Coastal	Report	Research	Design	Field	Lab, Data	Report	Research
Wetlands	Research	Research	Research	Design	Field	Lab, Data	Report

National Coastal Condition Report



- All coastal States and Puerto Rico participated in monitoring
- Data support status and trends at regional, State and local scales
- Strong support among states to continue partnership with EPA, NOAA, USGS, USFWS and others
- Built State capacity to assess coastal waters

Summary of results from the National Coastal Assessment III (2008)

National Coastal Condition Reports

- NCCR I (2001)
  - Data from 1990 to 1996
- NCCR II (2005)
  - Data incorporated from 1997 to 2000
- NCCR III (2008)
  - Data incorporated from 2001 to 2002
- NCCR IV (in progress)
  - Data incorporated from 2003 to 2006

Key Questions Being Asked by this Survey

- What percent of the Nation's coastal waters are in good, fair, and poor condition for key indicators of ecological health and human influence?
- What is the relative importance of key stressors such as nutrients and pathogens?
- What are the trends in marine coast lines and the baseline conditions of the Great Lakes nearshore area?

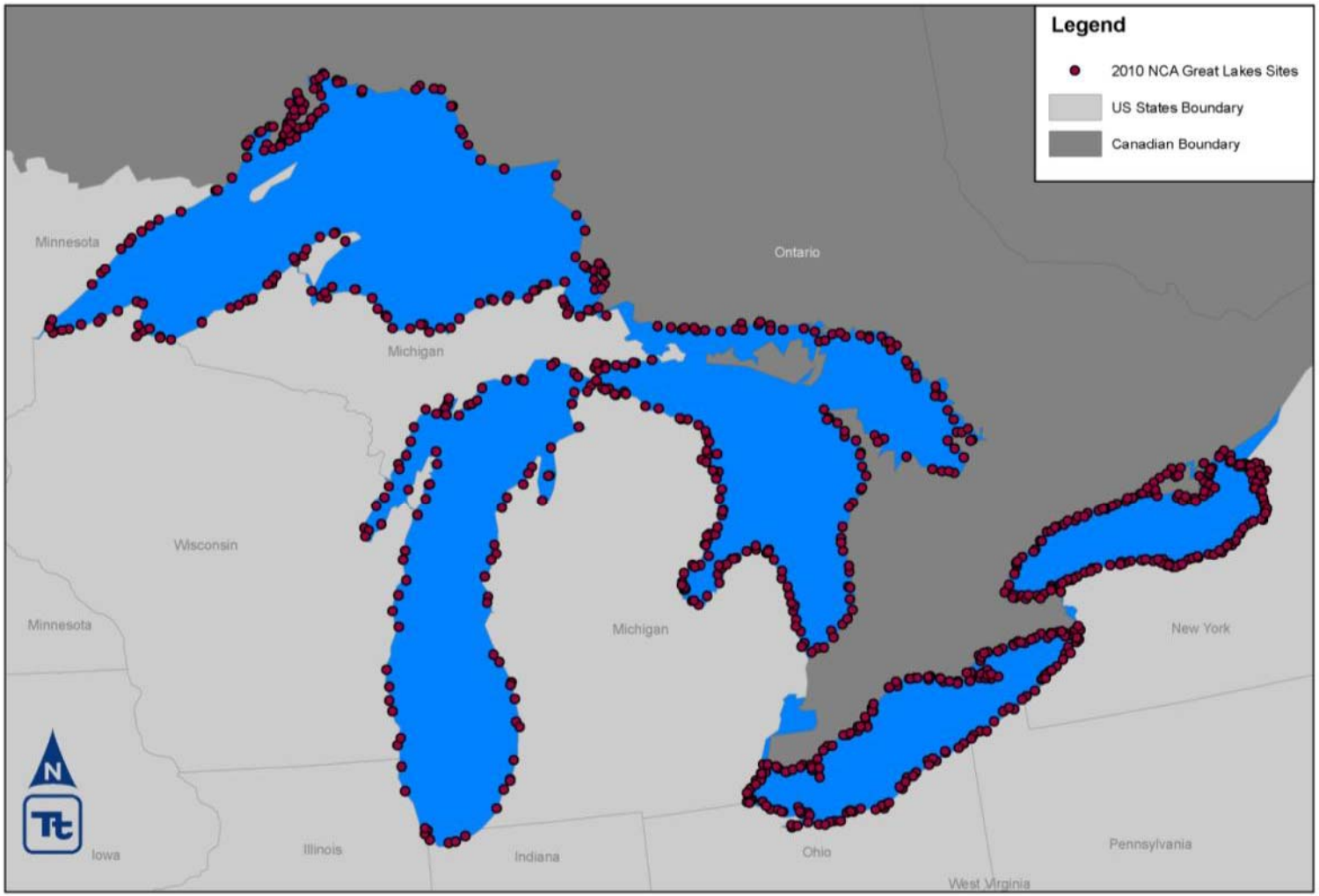
NCCA Specifics

- Approximately 1000 sites
  - 682 coastal marine (67 revisits)
  - 225 Great Lakes (25 revisits)
- Sampling Index Period: May/June – September 2010
- $8000 in 106 funds allocated per site
- Field Crew Training: April – June 2010

Target Population

- All coastal waters of the US from head of salt to confluence with the ocean
  - Head of salt is .05 ppt
  - Includes inland waters and major embayments (e.g. FL Bay and Cape Cod Bay)
  - Sites also drawn for HI and PR
- For Great Lakes, the US portion of shallow nearshore zones of Lakes Superior, Michigan, Huron, Erie, and Ontario
  - Nearshore defined as shoreline to 30m depth, to a max of 5km from shoreline

NCCA Great Lakes Sites



Core Indicators

- Water Column
  - Salinity
  - Temperature
  - pH
  - DO
  - PAR
  - Secchi depth
  - DIN, DIP, TN, TP
  - chl *a*
  - *Enterococci*

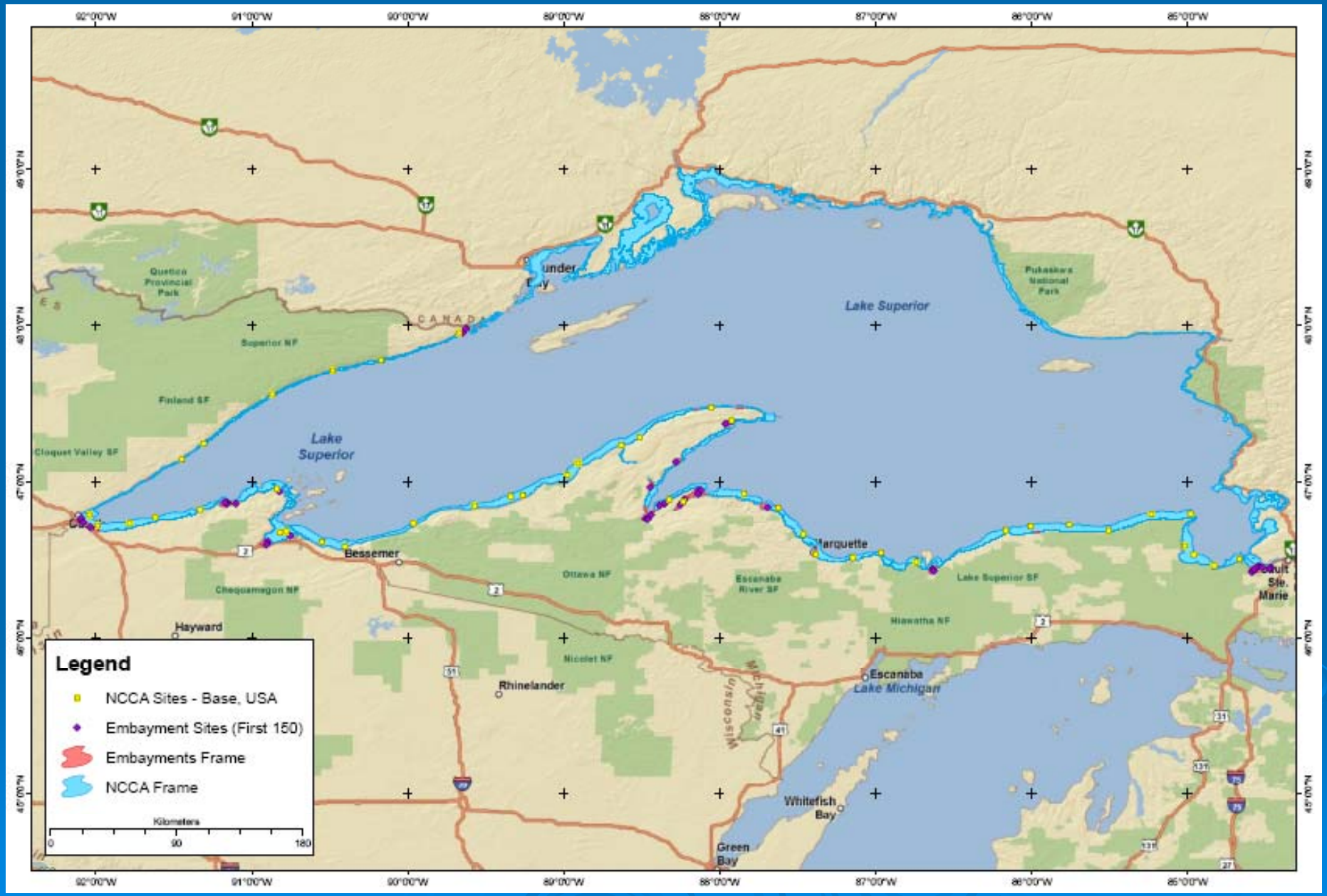
- Sediment
  - TOC
  - % silt/clay
  - Chemistry
  - Toxicity
  - Benthic macrofauna
- Fish
  - Whole fish tissue

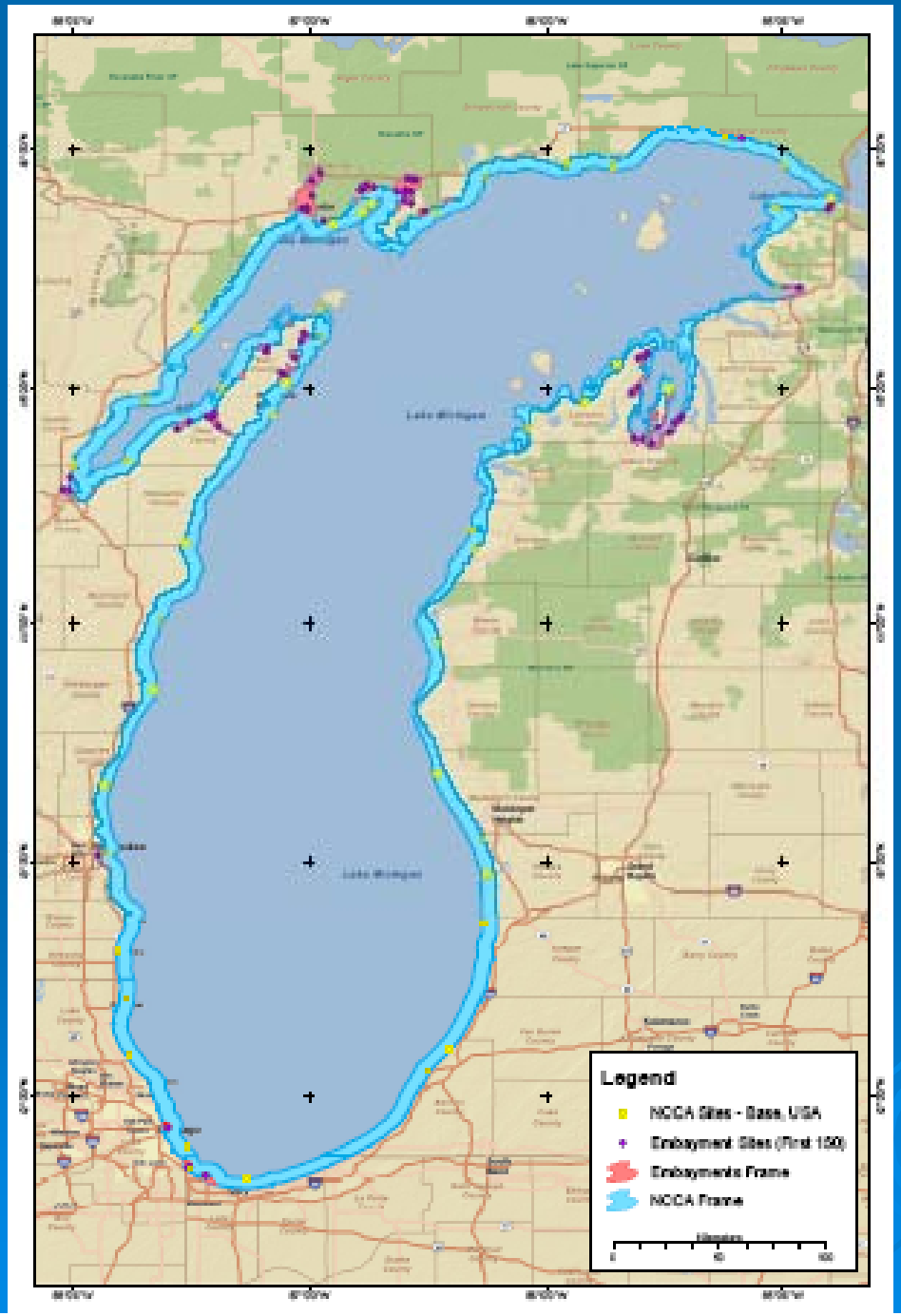
Enhancements in Great Lakes

- Additional Sites
  - **152** Embayment and harbor sites
  - **40** National Park Service sites
    - Session J1: 4:15 pm, Eva Di'Donato
- Additional Indicators
  - Phytoplankton
  - Underwater camera
  - Human Fish Tissue

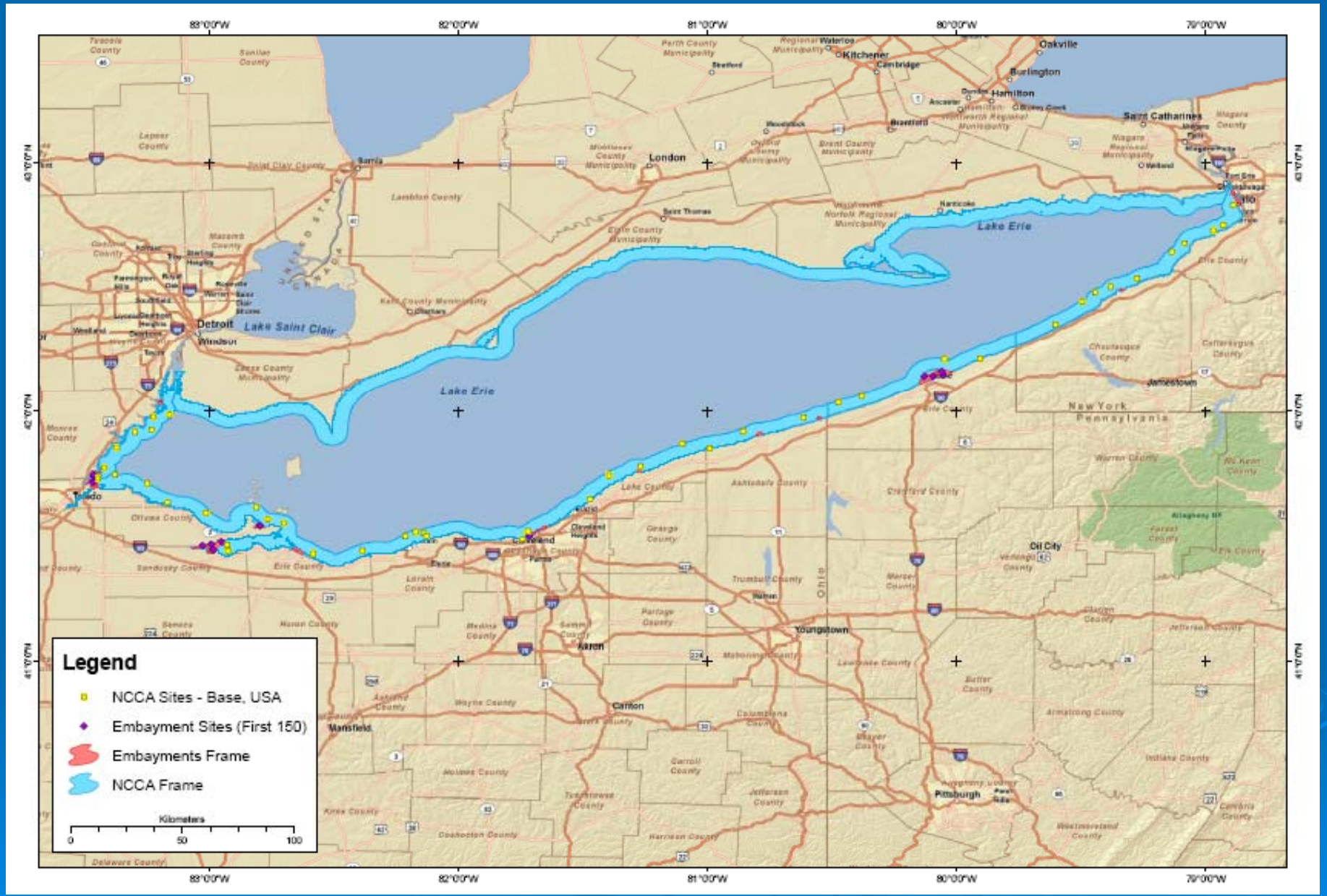
Human Health Fish Tissue

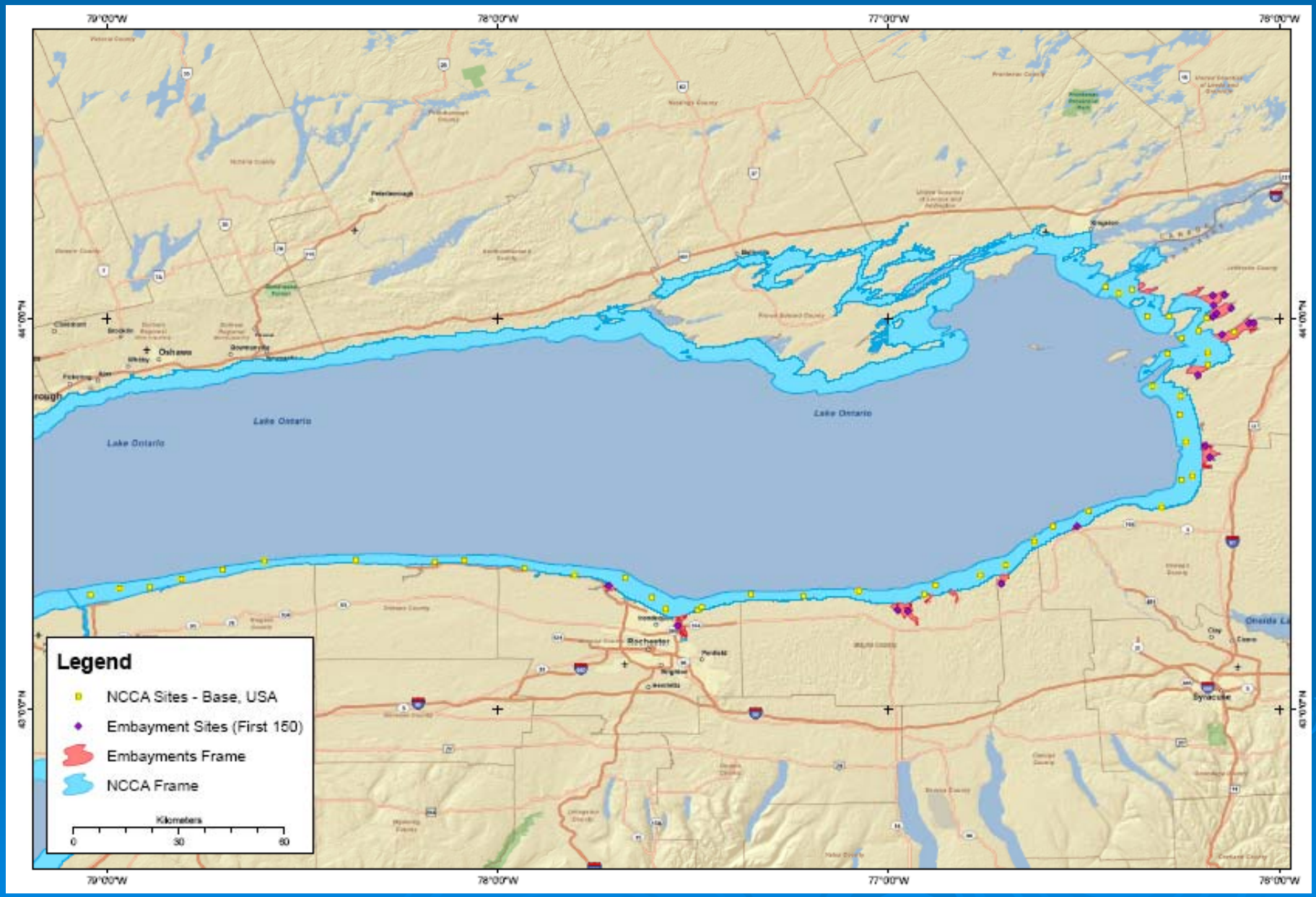
- Collected at first 30 sites in each lake
- Samples selected from targeted species list
- Analyzed for
  - 12 metals (including mercury), perfluorinated compounds, omega-3 fatty acids
  - Pharmaceuticals and PBDEs under discussion
- Poster 046: Leanne Stahl


Legend
NCCA Sites - Base, USA
Embayment Sites (First 150)
Embayments Frame
NCCA Frame
Kilometers
0
90
180
Lake Superior
Lake Michigan
Bessemer
Hayward
Rhinelander
Marquette
Escanaba
Whitefish Bay
Green Bay
Sault Ste. Marie
Superior NF
Ottawa NF
Chequamegon NF
Nicolet NF
Hiawatha NF
Lake Superior SF
Escanaba River SF
Cloquet Valley SF
Finland SF
Quetico Provincial Park
Pukaskwa National Park
Wisconsin
Michigan

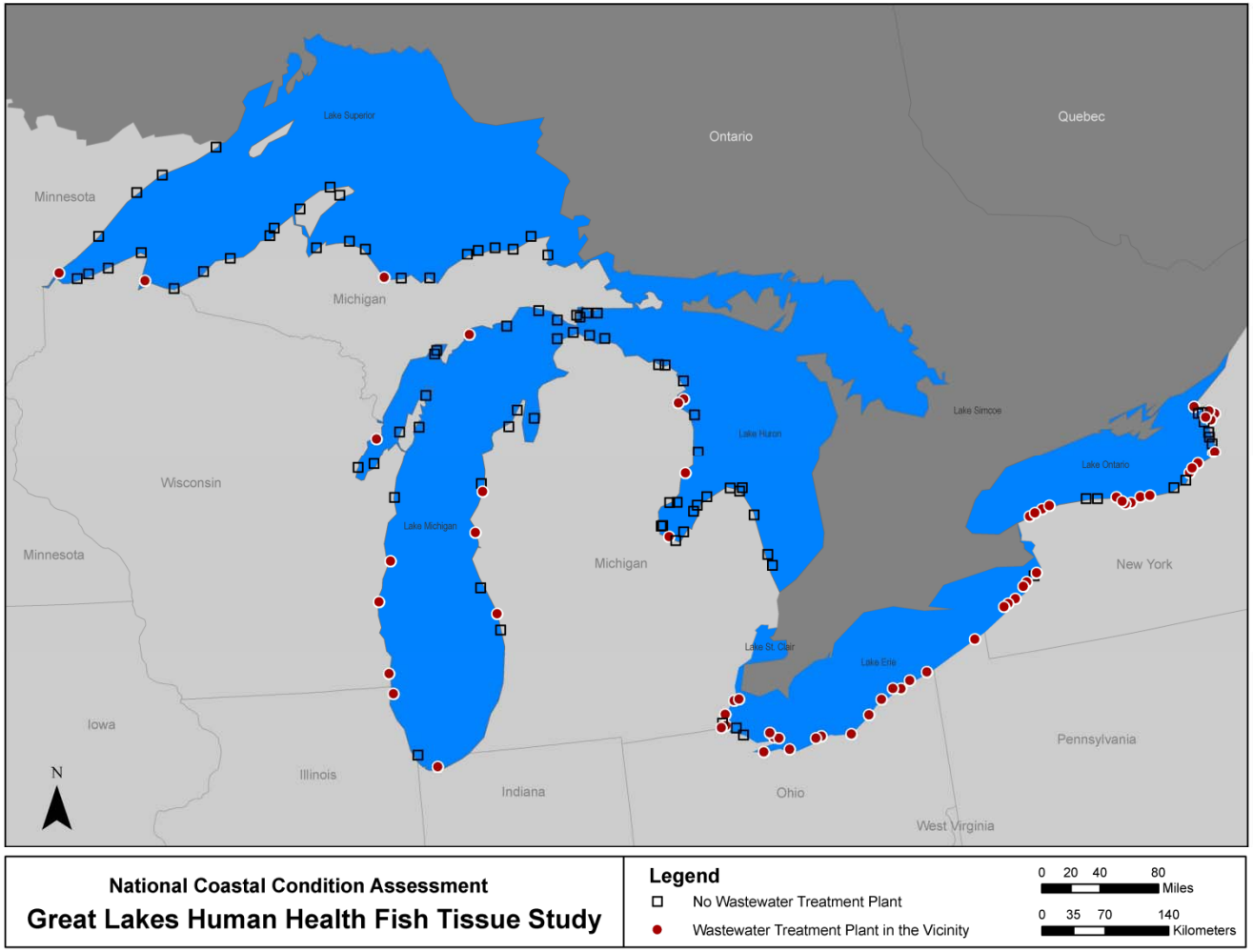

Legend
NCCA Sites - Base, USA
Embayment Sites (First 100)
Embayments Frame
NCCA Frame

Legend
NCCA Sites - Saga, USA
Embayment Sites (First 100)
Embayments Frame
NCCA Frame
Bay City
Saginaw
Warren


Legend
NCCA Sites - Base, USA
Embayment Sites (First 150)
Embayments Frame
NCCA Frame
Kilometers
0
50
100
Lake Erie
Lake Saint Clair
Detroit
Windsor
London
Sarnia
Toledo
Cleveland
Akron
Youngstown
Pittsburgh
Buffalo
Hamilton
Kitchener
Oakville
Burlington
Saint Catharines
Jamestown
New York
Pennsylvania
Ohio
83°0'0"W
82°0'0"W
81°0'0"W
80°0'0"W
79°0'0"W


79°00'W
78°00'W
77°00'W
76°00'W
44°00'N
43°00'N
Lake Ontario
Lake Ontario
Lake Ontario
Legend
NCCA Sites - Base, USA
Embayment Sites (First 150)
Embayments Frame
NCCA Frame
Kilometers
0
30
60

Great Lakes Human Health Fish Tissue Sites



Additional comments and inquiries should be directed to:

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